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Future prospect of biomass and bio-energy: A Review

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Biomass is a promising raw material for energy production, heat transfer technology which includes bagasse, rice husks, grass, cotton stalks, coconut shells, soy husks, oil-soaked cakes, coffee grounds, jute waste, peanut shells, peanut shells etc. About 32% of the country's total energy consumption is still derived from biomass and more than 70% of the country's population depends on it for its energy needs. The modernization of biomass energy use has taken place in the past in just three ways namely (1) technology improvement in traditional biomass applications such as for cooking and rural industries, (2) development of process for conversion of raw biomass to superior fuels (such as liquid fuels, gas and briquettes), and (3) biomass penetration based electricity generation technologies. These developments have opened up new biomass energy systems in India to address energy security and environmental concerns. Modern technology provides opportunities to convert biomass into fossil fuels (such as ethanol and methanol) and electricity. The Ministry has been implementing the biomass power / co-generation program since the mid-1990s. More than 500 biomass projects and bagasse cogeneration include 9806 MW installed in the country to generate electricity. Leading states for biomass energy projects are Chhattisgarh, Madhya Pradesh, Gujarat, Rajasthan and Tamil Nadu. According to 31.10.2019, a total capacity of 10145 MW has been incorporated into the Biomass Power and Cogeneration Sector, installed Biomass Power - 1826 MW, installed Capacity of Bagasse Cogeneration - 7547 MW. The advantages of setting up biogas power plants are that they can save annual energy costs, reduce CO_2 emission, bio fertilizer production, direct and indirect employment for people. If progress is made at this rate, biomass will provide enough bio-energy in the future in India.

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